

## CLAIMS

We claim:

1. A method in a computing system for naming groups of users  
1 of a subject Web site, comprising:  
3 retrieving information identifying, for each of a plurality of groups,  
4 users that are members of the group;  
5 for each group, analyzing properties of the members of the group to  
6 identify properties that distinguish users that are members of the group from  
7 users that are not members of the group, the analyzed properties relating to  
8 interactions with the subject Web site undertaken by users;  
9 for at least one selected group:  
10 displaying the properties identified as distinguishing  
11 members of the selected group from users that are not members of the selected  
12 group;  
13 receiving user input specifying a name for the selected  
14 group; and  
15 persistently storing the specified name in a manner that  
16 associates the specified name with the selected group, enabling the specified  
17 name to be displayed in conjunction with the selected group at a future time.

2. The method of claim 1, further comprising, for each selected  
1 group, displaying with each property identified for the selected group an icon  
2 representing the property.

3. The method of claim 1 wherein one or more properties are  
1 identified that reflect whether the users viewed a particular Web page.

4. The method of claim 1 wherein one or more properties are  
1 identified that reflect whether the users purchased a particular item.

5. The method of claim 1 wherein one or more properties are  
1 identified that reflect whether the users viewed a Web page among a group of  
2 Web pages relating to a particular product category.

6. The method of claim 1 wherein one or more properties are  
1 identified that reflect whether the users purchased an item in a particular product  
2 category.

7. A method in a computing system for analyzing each of a  
1 plurality of groups of items, comprising:  
3 retrieving information identifying, for each of a plurality of groups,  
4 items that are members of the group; and  
5 for each group, analyzing attributes of the items of the group to  
6 identify attributes that distinguish items that are members of the group from items  
7 that are not members of the group.

8. The method of claim 7, further comprising, for each group,  
1 generating a characterization of the group that incorporates the attributes  
2 identified for the group.

9. The method of claim 7, further comprising, for at least one  
1 selected group, displaying indications of the identified attributes in conjunction  
2 with an indication of the identified group.

10. The method of claim 7, further comprising, for each selected  
1 group, displaying with each attribute identified for the selected group an icon  
2 representing the attribute.

11. The method of claim 7, further comprising, for a  
1 distinguished group among the selected groups:  
3 receiving user input specifying a name for the distinguished group;  
4 and  
5 persistently storing the specified name in a manner that associates  
6 the specified name with the distinguished group, enabling the specified name to  
7 be displayed in conjunction with the distinguished group at a future time.

12. The method of claim 7 wherein the analyzed attributes of the  
1 items are binary attributes having one of two possible values.

13. The method of claim 12, further comprising converting  
1 values of a multivalued attribute having one of more than two possible values to  
2 binary values of an analyzed binary attribute.

14. The method of claim 12, further comprising converting  
1 values of a continuous attribute having any of a range of numerical values to  
2 binary values of an analyzed binary attribute.

15. The method of claim 7 wherein the analyzed attributes of the  
1 items are multivalued attributes having one of more than two possible values.

16. The method of claim 7 wherein the analyzed attributes of the  
1 items are continuous attributes having any of a range of numerical values.

17. The method of claim 7 wherein the analysis is conducted in  
1 accordance with the first-principle method.

18. The method of claim 7 wherein the analysis is conducted  
1 using contingency matrices.

19. The method of claim 7 wherein the analysis is conducted in  
1 accordance with the chi-square approach.

20. The method of claim 7 wherein the analysis is conducted  
1 using Fisher's Exact Test.

21. The method of claim 7 wherein the analysis is conducted  
1 using factor analysis.

22. The method of claim 7 wherein the analysis is conducted  
1 using uncertainty measures.

23. The method of claim 7 wherein the analysis is conducted  
1 using Shannon's entropy measure.

24. The method of claim 7 wherein the analysis is conducted  
1 using mutual information measures.

25. The method of claim 7 wherein the analysis is conducted  
2 using a mathematical measure that indicates the degree of independence of an  
3 attribute from the membership of a particular segment group.

26. A computer-readable medium whose contents cause a  
1 computing system to analyze each of a plurality of groups of items by:  
3 retrieving information identifying, for each of a plurality of groups,  
4 items that are members of the group; and  
5 for each group, analyzing attributes of the items of the group to  
6 identify attributes that distinguish items that are members of the group from items  
7 that are not members of the group.

27. The computer-readable medium of claim 26 wherein the  
1 contents of the computer-readable medium further cause the computing system  
2 to, for each group, generate a characterization of the group that incorporates the  
3 attributes identified for the group.

28. The computer-readable medium of claim 26 wherein the  
1 contents of the computer-readable medium further cause the computing system  
2 to, for at least one selected group, display indications of the identified attributes  
3 in conjunction with an indication of the identified group.

29. A method in a computing system for characterizing a  
1 selected group of items relative to one or more other groups of items, comprising:  
3 displaying information identifying the selected group; and  
4 in conjunction with the displayed information identifying the  
5 selected group, displaying one or more icons, each icon indicating a  
6 characteristic of members of the selected group that differentiates typical  
7 members of the selected group from typical members of the other groups.

30. The method of claim 29 wherein a plurality of icons are  
1 displayed, and wherein the plurality of icons is displayed in an order  
2 corresponding to the extent to which the characteristic indicated by each

4 differentiates typical members of the selected group from typical members of the  
5 other groups.

31. The method of claim 29, further comprising displaying, in  
1 conjunction with each displayed icon, an indication of the extent to which the  
2 characteristic indicated by each differentiates typical members of the selected  
3 group from typical members of the other groups.

32. The method of claim 29, further comprising displaying, in  
1 conjunction with each displayed icon, a shape whose length indicates the extent  
2 to which the characteristic indicated by the displayed icon differentiates typical  
3 members of the selected group from typical members of the other groups.

33. The method of claim 29, further comprising displaying, in  
1 conjunction with each displayed icon, an indication of the extent to which the  
2 members of the selected group has the characteristic indicated by the icon.

34. The method of claim 29, further comprising displaying, in  
1 conjunction with each displayed icon, the percentage of the members of the  
2 selected group has the characteristic indicated by the icon.

35. The method of claim 29 wherein each item in the selected  
1 group is a user, and wherein a distinguished icon among the displayed icons  
2 indicates a characteristic reflecting either performance by users or failure of users  
3 to perform a selected action with respect to products in a selected product  
4 category, the method further comprising displaying, in conjunction with each  
5 displayed icon, one or more product indications, the displayed products  
6 indications indicating the products in the selected product category with respect  
7 to which the largest numbers of the users of the selected group either performed  
8 the selected action or failed to perform the selected action.

36. The method of claim 35 wherein the displayed product  
1 indications are displayed in an order corresponding to the number of users of the  
2 selected group either performed the selected action or failed to perform the  
3 selected action.

37. The method of claim 35 wherein a Web site includes a Web  
1 page for each product in the selected product category, and wherein the selected  
2 action is viewing the Web page for a product in the selected product category.

38. The method of claim 35 wherein a Web site includes a Web  
1 page in a selected Web page category, and wherein the selected action is viewing  
2 the Web page in the selected Web page category.  
3

39. The method of claim 35 the selected action is purchasing a  
1 product in the selected product category.

40. The method of claim 35 wherein a Web site includes a Web  
1 page for each product in the selected product category, and wherein each  
2 displayed product indication includes a link to the Web page for the product  
3 indicated by the product indication.

41. The method of claim 29 wherein the characteristic indicated  
1 by a distinguished one of the displayed icons is possession of a distinguished  
2 attribute by at least a portion of the members of the selected group.

42. The method of claim 29 wherein the characteristic indicated  
1 by a distinguished one of the displayed icons is non-possession of a distinguished  
2 attribute by at least a portion of the members of the selected group.

43. The method of claim 29 wherein the displayed icons  
1 characterize a selected group of users of a Web site.

44. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a shopping basket.

45. The method of claim 29 wherein the displayed icons are  
1 brand logo icons that indicate actions related to one or more brands of products.  
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46. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a shopping basket overlaid by a circle-slash symbol  
2 indicating negation.

47. The method of claim 29 wherein one of the displayed icons  
1 indicates a high number of item purchases.

48. The method of claim 29 wherein one of the displayed icons  
1 indicates a low number of item purchases.

49. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a coupon.

50. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a coupon overlaid by a circle-slash symbol indicating  
2 negation.

51. The method of claim 29 wherein one of the displayed icons  
1 indicates a high level of coupon use.



52. The method of claim 29 wherein one of the displayed icons  
1 indicates a low level of coupon use.

53. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a dollar sign.

54. The method of claim 29 wherein one of the displayed icons  
1 conveys the likeness of a dollar sign overlaid by a circle-slash symbol indicating  
2 negation.

55. The method of claim 29 wherein one of the displayed icons  
1 indicates a high level of spending.

56. The method of claim 29 wherein one of the displayed icons  
1 indicates a low level of spending.

57. The method of claim 29, further comprising displaying a  
1 control usable by a user to specify a name for the selected group.

58. The method of claim 29 wherein the selected group and the  
1 other groups are mutually exclusive, in that no item belongs to more than one  
2 group.

59. A computing system for characterizing a selected group of  
1 items relative to one or more other groups of items, comprising:  
3 a display device; and  
4 a display generation subsystem that causes to be displayed together  
5 on the display device:  
6 information identifying the selected group, and

7 one or more icons, each icon indicating a characteristic of  
8 members of the selected group that differentiates typical members of the selected  
9 group from typical members of the other groups.

60. The computing system of claim 59 wherein the display  
1 generation subsystem causes a plurality of icons to be displayed, in an order  
2 corresponding to the extent to which the characteristic indicated by each  
3 differentiates typical members of the selected group from typical members of the  
4 other groups.

61. The computing system of claim 59 wherein the display  
1 generation subsystem causes to be displayed, in conjunction with each displayed  
2 icon, an indication of the extent to which the characteristic indicated by each  
3 differentiates typical members of the selected group from typical members of the  
4 other groups.

62. The computing system of claim 59 wherein the display  
1 generation subsystem causes to be displayed, in conjunction with each displayed  
2 icon, a shape whose length indicates the extent to which the characteristic  
3 indicated by the displayed icon differentiates typical members of the selected  
4 group from typical members of the other groups.

63. The computing system of claim 59 wherein the display  
1 generation subsystem causes to be displayed, in conjunction with each displayed  
2 icon, the percentage of the members of the selected group has the characteristic  
3 indicated by the icon.

64. One or more computer memories collectively containing a  
1 data structure identifying possible characterizations of groups of items,  
2 comprising a plurality of indications each indicating one of a plurality of possible

4 characterizations of groups of items, such that the contents of the data structure  
5 may be used to select possible characterization that characterize a group of items.

65. The computer memories of claim 64 wherein the data  
1 structure further comprises, for each indicated possible characterization,  
2 information identifying an icon associated with the possible characterization,  
4 such that the contents of the data structure may be used to display icons  
5 associated with the selected possible characterizations.

66. The computer memories of claim 64 wherein the data  
1 structure further comprises, for each indicated possible characterization,  
2 information indicating a differentiation threshold, the differentiation threshold  
3 indicating the extent to which the subject of the possible characterization must  
4 differentiate a group of items from items in other groups in order for the possible  
5 characterization to apply to the group of items,  
7 such that possible characterizations may be selected based upon satisfaction of  
8 their differentiation thresholds.

67. One or more generated data signals collectively conveying a  
1 data structure indicating a characterization of a group of items, comprising  
2 information identifying one or more characteristics that distinguish typical items  
3 in the group of items from typical items outside the group of items,  
5 such that the contents of the data structure may be used to display characteristics  
6 of the group of items that characterize the group of items.

68. The generated data signals of claim 67 wherein the data  
1 structure is displayable document.

69. The generated data signals of claim 67 wherein the data  
1 structure is an HTML document.

1           70. The generated data signals of claim 67 wherein the data  
2 structure is an ActiveX control.

1           71. The generated data signals of claim 67 wherein the data  
2 structure contains an application that displays characteristics of the group of  
3 items in a display area.

1           72. The generated data signals of claim 67 wherein the data  
2 structure further comprises, for each identified characteristic, information  
3 identifying an icon representing the characteristic,  
4 such that the contents of the data structure may be used to display an icon  
5 representing each identified characteristic.

1           73. The generated data signals of claim 67 wherein the data  
2 structure further comprises information identifying an order for the identified  
3 characteristics that reflects the relative extents to which the identified  
4 characteristics distinguish typical items in the group of items from typical items  
5 outside the group of items,  
6 such that the contents of the data structure may be used to display indications of  
7 the identified characteristics in the identified order.

1           74. The generated data signals of claim 73 wherein the  
2 identified order for the identified characteristics reflects the relative extents to  
3 which the identified characteristics distinguish typical items in the group of items  
4 from typical items outside the group of items.

1           75. The generated data signals of claim 67 wherein the data  
2 structure further comprises information indicating the extent to which the items  
3 in the group of items possess each of the identified characteristics.

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76. The generated data signals of claim 67 wherein each item in  
1 the group is an actor, and wherein a selected one of the identified characteristics  
2 reflects a particular action that at least a portion of the actors in the group have  
3 performed with respect to an element in a selected set, and wherein the data  
4 structure further comprises, for each of a subset of the elements in the selected  
5 set with respect to which the largest numbers of the actors performed the selected  
6 action, a hyperlink to a document describing the element.

77. One or computer memories collectively containing a data  
1 structure indicating a characterization of a group of items, comprising  
2 information identifying one or more characteristics that distinguish typical items  
3 in the group of items from typical items outside the group of items,  
5 such that the contents of the data structure may be used to display characteristics  
6 of the group of items that characterize the group of items.

78. The computer memories of claim 77 wherein the data  
1 structure further comprises, for each identified characteristic, information  
2 identifying an icon representing the characteristic,  
4 such that the contents of the data structure may be used to display an icon  
5 representing each identified characteristic.

79. The computer memories of claim 77 wherein the data  
1 structure further comprises information identifying an order for the identified  
2 characteristics that reflects the relative extents to which the identified  
3 characteristics distinguish typical items in the group of items from typical items  
4 outside the group of items,  
6 such that the contents of the data structure may be used to display indications of  
7 the identified characteristics in the identified order.

80. The computer memories of claim 79 wherein the identified  
1 order for the identified characteristics reflects the relative extents to which the  
2 identified characteristics distinguish typical items in the group of items from  
3 typical items outside the group of items.